

SEQUENCE LISTING

<110> ISHIKAWA, Yukiko
 IMAIZUMI, Akira
 MATSUI, Kazuhiko
 KOJIMA, Hiroyuki

<120> Method for Producing Target Substance by Fermentation

<130> OP1582

<150> JP 2002-203764

<151> 2002-07-12

<160> 32

<170> PatentIn Ver. 2.0

<210> 1

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer for
 amplifying Escherichia coli arcA gene

<400> 1

cccaagctta aagcccttta cttagctta

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<210> 2

<211> 20

<212> DNA

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<223> Description of Artificial Sequence: primer for
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<400> 2

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<223> Description of Artificial Sequence: primer for
sequencing of Escherichia coli arcA gene

<400> 3

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<223> Description of Artificial Sequence: primer for
sequencing of Escherichia coli arcA gene

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<223> Description of Artificial Sequence: primer for
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<223> Description of Artificial Sequence: primer for
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<210> 7

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<223> Description of Artificial Sequence: primer for
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<210> 9

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<223> Description of Artificial Sequence: primer for
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<210> 13

<211> 29

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<223> Description of Artificial Sequence: primer for
sequencing of Escherichia coli sucA gene

<400> 13

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29

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<210> 15

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<223> Description of Artificial Sequence: primer for
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<210> 16

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<223> Description of Artificial Sequence: primer for

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<210> 17

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<223> Description of Artificial Sequence: primer for
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<400> 17

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<210> 18

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<223> Description of Artificial Sequence: primer for
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<210> 19

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<213> *Pantoea ananatis*

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<222> (41).. (757)

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[illegible]

Ser Thr Pro Asp Thr Pro Glu Ile Ile Ala Thr Ile His Gly Glu Gly
 215 220 225
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<210> 20

<211> 238

<212> PRT

<213> *Pantoea ananatis*

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 20 25 30
 Ala Thr Asp Gly Ala Glu Met His Gln Val Leu Thr Asp Asn Asp Val
 35 40 45
 Asn Leu Val Ile Met Asp Ile Asn Leu Pro Gly Lys Asn Gly Leu Leu
 50 55 60
 Leu Ala Arg Glu Leu Arg Glu Gln Ala Asn Val Ala Leu Met Phe Leu
 65 70 75 80
 Thr Gly Arg Asp Asn Glu Val Asp Lys Ile Leu Gly Leu Glu Ile Gly
 85 90 95
 Ala Asp Asp Tyr Ile Thr Lys Pro Phe Asn Pro Arg Glu Leu Thr Ile
 100 105 110
 Arg Ala Arg Asn Leu Leu Leu Arg Thr Met Asn Leu Pro Leu Pro Asn
 115 120 125
 Glu Glu Arg Arg Gln Val Glu Ser Tyr Lys Phe Asn Gly Trp Glu Leu
 130 135 140
 Asp Ile Asn Ser Arg Ser Leu Ile Asn Pro Asn Gly Glu Gln Tyr Lys
 145 150 155 160
 Leu Pro Arg Ser Glu Phe Arg Ala Met Leu His Phe Cys Glu Asn Pro
 165 170 175
 Gly Lys Ile Gln Thr Arg Ala Asp Leu Leu Lys Lys Met Thr Gly Arg
 180 185 190
 Asp Leu Lys Pro His Asp Arg Thr Val Asp Val Thr Ile Arg Arg Ile
 195 200 205
 Arg Lys His Phe Glu Ser Thr Pro Asp Thr Pro Glu Ile Ile Ala Thr
 210 215 220
 Ile His Gly Glu Gly Tyr Arg Phe Cys Gly Asp Leu Gln Asp
 225 230 235

<210> 21
 <211> 30
 <212> DNA
 <213> Artificial Sequence

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<223> Description of Artificial Sequence: primer for
 amplifying ori6K and mobRP4 gene

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<210> 22
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 <213> Artificial Sequence

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<223> Description of Artificial Sequence: primer for
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<210> 23
 <211> 30
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<223> Description of Artificial Sequence: primer for
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<400> 23
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<210> 24
 <211> 30
 <212> DNA
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<223> Description of Artificial Sequence: primer for
amplifying Chloramphenicol resistant gene

<400> 24

ggggagatct tgcaaggcga ttaagttagg

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<210> 25

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer for
amplifying kanamycin resistant gene

<400> 25

cccagatcta gttttcgccc cgaagaacg

29

<210> 26

<211> 29

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer for
amplifying kanamycin resistant gene

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cccagatctc cagagtcctc ctcagaaga

29

<210> 27

<211> 29

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer for
amplifying Pantoea ananatis arcA gene

<400> 27	
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<212> DNA

<213> Escherichia coli

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<222> (101).. (817)

<400> 31

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                                         Met Gln Thr Pro His
                                         1           5

att ctt atc gtt gaa gac gag ttg gla aca cgc aac acg ttg aaa agt 163
Ile Leu Ile Val Glu Asp Glu Leu Val Thr Arg Asn Thr Leu Lys Ser
          10           15           20

att ttc gaa gcg gaa ggc tat gat gtt ttc gaa gcg aca gat ggc gcg 211
Ile Phe Glu Ala Glu Gly Tyr Asp Val Phe Glu Ala Thr Asp Gly Ala
          25           30           35

gaa atg cat cag atc ctc tct gaa tat gac atc aac ctg gtg atc atg 259
Glu Met His Gln Ile Leu Ser Glu Tyr Asp Ile Asn Leu Val Ile Met
          40           45           50

gat atc aat ctg ccg ggt aag aac ggt ctt ctg tta gcg cgt gaa ctg 307
Asp Ile Asn Leu Pro Gly Lys Asn Gly Leu Leu Leu Ala Arg Glu Leu
          55           60           65

cgc gag cag gcg aat gtt gcg ttg atg ttc ctg act ggc cgt gac aac 355
Arg Glu Gln Ala Asn Val Ala Leu Met Phe Leu Thr Gly Arg Asp Asn
          70           75           80           85

gaa gtc gat aaa att ctc ggc ctc gaa atc ggt gca gat gac tac atc 403
Glu Val Asp Lys Ile Leu Gly Leu Glu Ile Gly Ala Asp Asp Tyr Ile
          90           95           100

acc aaa ccg ttc aac ccg cgt gaa ctg acg att cgt gca cgc aac cta 451
Thr Lys Pro Phe Asn Pro Arg Glu Leu Thr Ile Arg Ala Arg Asn Leu
          105           110           115

ctg tcc cgt acc atg aat ctg ggt act gtc agc gaa gaa cgt cgt agc 499
Leu Ser Arg Thr Met Asn Leu Gly Thr Val Ser Glu Glu Arg Arg Ser
          120           125           130

gtt gaa agc tac aag ttc aat ggt tgg gaa ctg gac atc aac agc cgt 547
Val Glu Ser Tyr Lys Phe Asn Gly Trp Glu Leu Asp Ile Asn Ser Arg
          135           140           145

tcg ttg atc ggc cct gat ggc gag cag tac aag ctg ccg cgc agc gag 595
Ser Leu Ile Gly Pro Asp Gly Glu Gln Tyr Lys Leu Pro Arg Ser Glu

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ttc cgc gcc atg ctt cac ttc tgt gaa aac cca ggc aaa att cag tcc				643
Phe Arg Ala Met Leu His Phe Cys Glu Asn Pro Gly Lys Ile Gln Ser				
	170	175	180	
cgt gct gaa ctg ctg aag aaa atg acc ggc cgt gag ctg aaa ccg cac				691
Arg Ala Glu Leu Leu Lys Lys Met Thr Gly Arg Glu Leu Lys Pro His				
	185	190	195	
gac cgt act gta gac gtg acg atc cgc cgt att cgt aaa cat ttc gaa				739
Asp Arg Thr Val Asp Val Thr Ile Arg Arg Ile Arg Lys His Phe Glu				
	200	205	210	
tct acg ccg gat acg ccg gaa atc atc gcc acc att cac ggt gaa ggt				787
Ser Thr Pro Asp Thr Pro Glu Ile Ile Ala Thr Ile His Gly Glu Gly				
	215	220	225	
tat cgc ttc tgc ggt gat ctg gaa gat taa tcggctttac caccgtcaaa				837
Tyr Arg Phe Cys Gly Asp Leu Glu Asp				
230	235			
aaaaacggcg ctttttagcg ccgtttttat ttttcaacct tatttccaga tacglaactc				897
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<210> 32

<211> 238

<212> PRT

<213> Escherichia coli

<400> 32

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Ala Thr Asp Gly Ala Glu Met His Gln Ile Leu Ser Glu Tyr Asp Ile			
	35	40	45
Asn Leu Val Ile Met Asp Ile Asn Leu Pro Gly Lys Asn Gly Leu Leu			
	50	55	60
Leu Ala Arg Glu Leu Arg Glu Gln Ala Asn Val Ala Leu Met Phe Leu			
	65	70	75
Thr Gly Arg Asp Asn Glu Val Asp Lys Ile Leu Gly Leu Glu Ile Gly			
	85	90	95
Ala Asp Asp Tyr Ile Thr Lys Pro Phe Asn Pro Arg Glu Leu Thr Ile			
	100	105	110
Arg Ala Arg Asn Leu Leu Ser Arg Thr Met Asn Leu Gly Thr Val Ser			
	115	120	125

Glu	Glu	Arg	Arg	Ser	Val	Glu	Ser	Tyr	Lys	Phe	Asn	Gly	Trp	Glu	Leu
130						135				140					
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Leu	Pro	Arg	Ser	Glu	Phe	Arg	Ala	Met	Leu	His	Phe	Cys	Glu	Asn	Pro
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Gly	Lys	Ile	Gln	Ser	Arg	Ala	Glu	Leu	Leu	Lys	Lys	Met	Thr	Gly	Arg
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Glu	Leu	Lys	Pro	His	Asp	Arg	Thr	Val	Asp	Val	Thr	Ile	Arg	Arg	Ile
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Arg	Lys	His	Phe	Glu	Ser	Thr	Pro	Asp	Thr	Pro	Glu	Ile	Ile	Ala	Thr
		210					215				220				
Ile	His	Gly	Glu	Gly	Tyr	Arg	Phe	Cys	Gly	Asp	Leu	Glu	Asp		
225						230				235					